

## Rhizosphaera Needle Cast

### The Fungus

*Rhizosphaera kalkhoffii* is a fungal infection that affects coniferous trees, most commonly Colorado blue spruce (*Picea pungens*). It affects mature needles and can alter a tree's appearance, but will rarely kill it. The fungus spreads in periods of humid, wet weather<sup>1</sup>.

### Signs & Symptoms

- In spring, mature needles turn brown to purple while new needles remain green.
- Affected needles will fall off in late summer, giving the tree a thin appearance.
- Damage begins in lower branches and moves up the tree<sup>2</sup>.
- Prolonged infection can result in branch dieback<sup>1</sup>.

### Positive Identification

Because symptoms are similar to other fungal infections of spruce trees, laboratory testing is recommended before proceeding with management strategies. For more information on the UMN Plant Disease Clinic, visit <https://pdc.umn.edu/>.



The bodies of the fungus are visible on the infected needles with a hand lens (2).



New growth is green while old growth is brown on an infected spruce (1).

### Prevention Techniques

- Avoid planting Colorado blue spruce and opt for Norway spruce, white spruce, or others better adapted for Minnesota's climate<sup>1</sup>.
- Encourage air circulation by thinning trees around spruce branches. Avoid splashing of water on the tree's needles by irrigation systems.
- Choose planting sites with moist, well-drained and acidic soils in full sun.

### Management & Control Considerations

- Confirm the infection type, as fungicides may not be effective in treating other plant health problems in spruce.
- Initial chemical treatment should be done in the spring when new needles at the branch tips are half their full size<sup>2</sup>.

### Sources

- 1) <https://extension.umn.edu/plant-diseases/rhizosphaera-needle-cast>
- 2) <https://hortnews.extension.iastate.edu/rhizosphaera-needle-cast>